



# Wind Resource Assessment

- **Main objective is to identify potentially windy areas that also possess other desirable qualities for wind project development**
- **Steps in the siting process:**
  - » Identification of potential wind development areas
  - » Inspection and ranking of candidate sites
  - » Selection of actual tower location(s) within the candidate sites



# Wind Resource Assessment Steps

- Preliminary area identification
- Ranking of candidate sites
- Selection of tower location(s)
- Development of a monitoring plan
- Quality assurance



# Preliminary Area Identification

- **Objective is to determine or verify whether sufficient wind resources exist within an area to justify further site-specific investigation**
  - » use of existing wind data
  - » topographic indicators
  - » field surveys
    - flagged trees
    - accessibility
    - land use
    - obstructions
    - available land area





# Ranking of Candidate Sites

- **Objective is to compare areas to distinguish relative development potential**
- **In addition to accessibility, land use, obstructions, and available land area, siting criteria could include:**
  - » proximity to transmission lines
  - » potential impact on local aesthetics
  - » cellular phone service reliability for data transfers
  - » potential avian interactions



# Selection of Tower Location(s)

- Objectives of this step in the siting process are to:
  - » obtain **representative** data for estimating the performance and/or economic viability of selected turbines, and
  - » screen for potential wind turbine installation sites



# Tower Types



**Tilt-  
up's to  
Lattice  
Towers**





# Tower Placement Guidelines

- **Select an open area free of obstructions**
- **Select a location that is representative of the majority of the site**
  - » in complex terrain, multiple towers may be required
- **Other issues**
  - » permitting
  - » lease agreements



# For Further Information

## ***WIND RESOURCE ASSESSMENT HANDBOOK***

*Fundamentals for Conducting  
a Successful Monitoring*



*Prepared By:*

*AWS Scientific, Inc.  
CESTM, 251 Fuller Road  
Albany, NY 12203  
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*Prepared for:*

*National Renewable Energy Laboratory  
1617 Cole Boulevard  
Golden, CO 80401*





# Web Site

[http://www.nrel.gov/wind/wind\\_pubs.html](http://www.nrel.gov/wind/wind_pubs.html)